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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/664,895 | 09/22/2003 | Takanori Kamoto | 1114-190 | 6800 |
| 23117 | 7590 | 07/19/2006 | EXAMINER | |
| NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203 | | | SHOSHO, CALLIE E | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1714 | |

DATE MAILED: 07/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,895

Applicant(s)

KAMOTO ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-10 and 12-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,4,5,9,10,16,17,22,23 and 26-30 is/are rejected.
7) ☒ Claim(s) 6-8,12-15,18-21,24 and 25 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. All outstanding rejections are overcome by applicants' amendment filed 5/11/06.

The new grounds of rejection set forth below are necessitated by applicants' amendment and thus, the following action is final.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 4, 9-10, 16-17, 22-23, and 26-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bradbury et al. (U.S. 6,187,084) in view of Koitabashi et al. (U.S. 6,454,402) and Uchiyama et al. (U.S. 5,748,208).

Bradbury et al. disclose ink jet ink comprising water, colorant, solvent such as glycol ethers, nonionic surfactant, and polyester obtained from aromatic dicarboxylic acid with ionized sulfonate group and polyhydric alcohol including glycols. The polyester possesses number average molecular weight of 1,000-25,000 and glass transition temperature of -20 to 70 °C. Bradbury et al. et al. also disclose recording method of recording images comprising depositing ink onto recording material from ink jet printer wherein the ink jet printer uses piezo or thermal process to form the recorded image wherein such printers would intrinsically possess ink head as presently claimed (col.1, lines 3-31, col.3, lines 19-23 and 27-32, col.4, lines 15-47, col.6, lines 63-66, col.7, lines 12-16, and col.10, lines 17-20 and 35-63). Attention is drawn to resin 1 (col.10, lines 35-63) that discloses polyester obtained from neopentyl glycol, diethylene glycol,

isophthalic acid, sodium-5-sulfoisophthalic acid, and adipic acid. Converting the amounts of each component in g to mols utilizing the molecular weight of each component, it is calculated that the polyester comprises approximately 5.49 mol% sodium-5-sulfoisophthalic acid. Attention is also drawn to Table 9 that discloses ink comprising this resin, water, dye, and nonionic surfactant known under the tradename Surfynol 465 which is well known, as disclosed by Uchiyama et al. (col.8, lines 1-17), to have formula identical to that of formula (I) in present claim 30.

The difference between Bradbury et al. and the present claimed invention is the requirement in the claim that the nonionic surfactant is present in amount of critical micelle concentration or more.

Bradbury et al. disclose the use of nonionic surfactant, however, there is no disclosure that the nonionic surfactant is present in amount of critical micelle concentration or more.

Koitaishi et al., which is drawn to ink jet inks, disclose the use of nonionic surfactant in amount equal to or greater than the critical micelle concentration in order to produce ink which is highly penetrable and results in ink with high fixability to paper (col.1, lines 45-61, col.15, lines 32-34 and 55-53, col.19, lines 63-66, col.20, lines 35-58, col.20, line 66-col.21, line 23, and col.22, lines 37-40).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use nonionic surfactant in amount equal to or greater than the critical micelle concentration in Bradbury et al. in order to produce ink which is highly penetrable and has high fixability to paper, and thereby arrive at the claimed invention.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bradbury et al. in view of Koitabashi et al. and Uchiyama et al. as applied to claims 1, 4, 9-10, 16-17, 22-23, and 26-30 above, and further in view of Sharma et al. '883 (U.S. 5,464,883).

The difference between Bradbury et al. in view of Koitabashi et al. and Uchiyama et al. and the present claimed invention is the requirement in the claim that the water present in the ink have electroconductivity of 250 $\mu\text{S}/\text{cm}$ or less.

Sharma et al. '883, which is drawn to aqueous ink jet ink comprising sulfopolyester, disclose using deionized water that possesses no ions in order to prevent precipitation of the sulfopolyester (col.4, lines 54-57). It is clear that such deionized water would intrinsically possess electroconductivity of 250 $\mu\text{S}/\text{cm}$ or less.

In light of the motivation for using deionized water disclosed by Sharma et al. '883 as described above, it therefore would have been obvious to one of ordinary skill in the art to use deionized water in the ink of Bradbury et al. in order to prevent precipitation of the sulfopolyester, and thereby arrive at the claimed invention.

Allowable Subject Matter

5. Claims 6-8, 12-15, 18-21, and 24-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 6-8, 12-15, 18-21, and 24-25 would be allowable over the “closest” prior art Bradbury et al. (U.S. 6,187,084) given that there is no disclosure in Bradbury et al. that the ink comprises pigment as required in each of claims 6-8, 12-15, 18-21, and 24-25.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
7/13/06